USDA Forest Service May 19, 2014
Grand Mesa, Uncompahgre, and Gunnison National Forests

Spruce Beetle and Sudden Aspen Decline Management Response

Basic Science and Analysis Assumptions: *Hydrology and Soils*

Guiding Issues and Goals

Issues include effects of mechanical treatments and possible new roads on:

- Fens,
- Wetlands,
- Water quality, and
- Soil conditions.

Goals are to:

- Protect or enhance fens, wetlands and riparian areas;
- Protect or enhance soil productivity; and
- Minimize erosion and sediment transport to surface water.

Overarching Assumptions

- Relatively small percentages of any one watershed will be treated during any one year.
- Design features and Best Management Practices (BMPs) will be used to eliminate or minimize effects.
- Pre-implementation surveys will be conducted. These will identify areas of avoidance and areas where treatments are likely to have unacceptable effects.
- Project-specific design features and BMPs will be selected based on pre-implementation surveys and effects analysis.
- New road creation will be held to a minimum and all roads will be properly maintained and constructed to Forest Service standards. When roads are decommissioned or put in storage they will incorporate BMPs to reduce erosion hazard.
- Prescribed fire should have minimal effects because of the small areas to be treated and lower severity of the fire.
- Proposed treatments should not change the condition of properly functioning watersheds.

Methods – Analysis Approach

Watershed condition is used as a baseline and initial analysis will focus on watersheds with functioning-at-risk elements. Project protocol will be to calculate the watershed area already disturbed by past and present activities to determine the level of treatment appropriate for each watershed to maintain or

enhance watershed condition. This will be done by using the opportunity areas, WUI areas, and hazard tree removal areas, to calculate the potential maximum area that could be affected by project activities. This provides a maximum impact-scenario of potential effects and shows which opportunity areas may have specific issues, such as proximity to fens or wetlands. All proposed projects will have pre-implementation surveys and watershed specialists will select appropriate design features and BMPs based on these pre-implementation surveys. Use of appropriate design features and BMPs will minimize project-related impacts.

Compliance with Legal, Policy, and Forest Plan Requirements

Federal and Forest Plan requirements for hydrology and soils include the following:

- Clean Water Act of 1977
- Executive Order 11988 – Floodplain Management
- Executive Order 11990 – Protection of Wetlands
- Forest Plan direction on:
    - Riparian Area Management
    - Water Resource Improvement and Maintenance
    - Soil Resource Management

Compliance with these requirements is met through the use of design features and BMPs as described in the EIS. Project-specific surveys and assessment of proper design features will be conducted prior to implementation. The results will determine the selection of appropriate design features and BMPs. Timber sale contract administrators oversee the implementation of design features and BMPs. Sale administrators or resource specialists conduct BMP monitoring to measure compliance.